

What is claimed is:

1 1. A removable disk drive apparatus, comprising:
2 a tray on which a plurality of concave portions for a
3 disk for supporting disk storage media having different
4 diameters are formed in concentric positions, wherein
5 said tray comprises:
6 larger disk support lugs provided at plural points on
7 a periphery of a concave portion for a larger diameter disk;
8 and
9 smaller disk support lugs provided at plural points on
10 a periphery of a concave portion for a smaller diameter disk;
11 said smaller disk support lugs including:
12 a storage groove provided at a plurality of points on
13 the periphery of the concave portion for a larger diameter
14 disk;
15 flexible lugs with elastic deformation supported in said
16 storage groove, and having tip portions projecting into the
17 periphery of the concave portion for a smaller diameter disk;
18 and
19 a stopper to keep the tip portions of the flexible lugs
20 projecting above a surface of the periphery of the concave
21 portion for a smaller diameter disk from the storage groove.

1 2. The removable disk drive apparatus according to claim
2 1, wherein

3 said flexible lug is fixed to said tray with a base portion,
4 and is formed as an elastic one point support structure, and
5 a tip portion can be deformed elastically in a thickness
6 direction of said tray using the base portion as a fulcrum.

1 3. The removable disk drive apparatus according to claim
2 2, wherein

3 said flexible lugs can be configured by bending an elastic
4 metal line material in a U-shaped form, fixing the base portions
5 on both ends to end surfaces of an outer periphery of the storage
6 groove, and allowing the tip portion of a U-shaped unit to
7 project into the periphery of the concave portion for a smaller
8 diameter disk from the storage groove.

1 4. The removable disk drive apparatus according to claim
2 2, wherein

3 said flexible lugs are elastic metal plates.

1 5. The removable disk drive apparatus according to claim
2 2, wherein

3 said stopper is configured by projections projecting
4 opposite each other on both sides of the storage groove, and
5 when the flexible lugs are subject to elastic deformation,
6 they pass over the stopper to suppress restoration of the
7 elasticity.

1 6. The removable disk drive apparatus according to claim
2 3, wherein

3 said stopper is configured by projections projecting
4 opposite each other on both sides of the storage groove, and
5 when the flexible lugs are subject to elastic deformation,
6 they pass over the stopper to suppress restoration of the
7 elasticity.

1 7. The removable disk drive apparatus according to claim
2 4, wherein

3 said stopper is configured by projections projecting
4 opposite each other on both sides of the storage groove, and
5 when the flexible lugs are subject to elastic deformation,
6 they pass over the stopper to suppress restoration of the
7 elasticity.

1 8. The removable disk drive apparatus according to claim
2 1, wherein

3 said smaller disk support lugs are provided at least two
4 points below and along the periphery of the concave portion
5 for a smaller diameter disk.

1 9. The removable disk drive apparatus according to claim
2 2, wherein

3 said smaller disk support lugs are provided at least two
4 points below and along the periphery of the concave portion
5 for a smaller diameter disk.

1 10. The removable disk drive apparatus according to claim
2 3, wherein
3 said smaller disk support lugs are provided at least two
4 points below and along the periphery of the concave portion
5 for a smaller diameter disk.

1 11. The removable disk drive apparatus according to claim
2 4, wherein
3 said smaller disk support lugs are provided at least two
4 points below and along the periphery of the concave portion
5 for a smaller diameter disk.

1 12. The removable disk drive apparatus according to claim
2 5, wherein
3 said smaller disk support lugs are provided at least two
4 points below and along the periphery of the concave portion
5 for a smaller diameter disk.

1 13. The removable disk drive apparatus according to claim
2 6, wherein
3 said smaller disk support lugs are provided at least two
4 points below and along the periphery of the concave portion
5 for a smaller diameter disk.

1 14. The removable disk drive apparatus according to claim
2 7, wherein

3 said smaller disk support lugs are provided at least two
4 points below and along the periphery of the concave portion
5 for a smaller diameter disk.

1 15. A removable disk drive apparatus, comprising:

2 a tray on which a plurality of concave portions for a
3 disk for supporting disk storage media having different
4 diameters are formed in the concentric positions, wherein

5 said tray comprises:

6 larger disk support lugs provided at a plurality of points
7 on a periphery of a concave portion for a larger diameter disk;

8 a storage groove provided at a plurality of points on
9 the periphery of the concave portion for a smaller diameter
10 disk;

11 said storage groove including:

12 a first concave portion provided opposite each other in
13 the radial direction in a position closer to a center of the
14 concave portion for a smaller diameter disk on both sides of
15 said storage groove; and

16 a second concave portion opposite each other in the radial
17 direction in the position apart from the center of the concave
18 portion for a smaller diameter disk; and

19 a rotating lug provided in said storage groove, and having
20 a first convex portion and a second convex portion on both
21 sides respectively corresponding to said first and second
22 concave portions in the storage groove;

23 said rotating lugs being supported as rotatable by fitting
24 the second convex portion into the second concave portion in
25 the storage groove; and

26 said rotating lugs rotating using as an axis the second
27 convex portion on both sides fit into the second concave portion
28 when the first convex portion is removed from the first concave
29 portion on both sides, the rear ends of the rotating lugs touch
30 the storage groove when the first convex portion on both sides
31 passes over the edge which is a boundary between the concave
32 portion for a larger diameter disk and the storage groove,
33 thereby holding a state in which the tip portion of a smaller
34 disk diameter projects above the surface of the periphery of
35 the concave portion for a smaller diameter disk from the storage
36 groove.

1 16. The removable disk drive apparatus according to claim
2 15, wherein

3 said front convex portions on both sides and corresponding
4 front concave portions are hemispherical, and said rear convex
5 portion on both sides and corresponding rear concave portions
6 are cylindrical.

1 17. The removable disk drive apparatus according to claim
2 15, wherein

3 said rotating lugs branch off in three units from one
4 plate, the branch units on both ends are radially spread on
5 the concave portion for a larger diameter disk, and a distance

6 between both outer sides of the branch units is formed a little
7 larger than a width of the storage groove.

1 18. The removable disk drive apparatus according to claim
2 16, wherein

3 said rotating lugs branch off in three units from one
4 plate, the branch units on both ends are extend up and down,
5 and a distance between the divided units on both ends is formed
6 a little larger than a width of the storage groove.